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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/689,645	10/13/2000	Hiroaki Sugiura	1190-0465P	7889

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EXAMINER	
STEPHANY, TIMOTHY J	

ART UNIT	PAPER NUMBER
2622	

DATE MAILED: 06/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/689,645	SUGIURA ET AL.	
	Examiner	Art Unit	
	Timothy J. Stephany	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 October 2000*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _____ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2, 5, 7*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Should applicant desire to obtain the benefit of foreign priority under 35 U.S.C. 119(a)-(d) prior to declaration of an interference, a translation of the foreign application should be submitted under 37 CFR 1.55 in reply to this action.

Specification

The disclosure is objected to because of the following informalities:

On page 2, line 10: misspelled word, "5 Mbit" should read "5 Mbites".

On page 10, line 21, on the three pages following or **wherever else it occurs** in the spec: duplicate word, "said said first comparison-result data" should read "said first comparison-result data".

On page 24, line 32: duplicate word, "six hue data, data data" should read "six hue data, data".

Appropriate correction is required, even if the given line locations of the errors are not figured the same by the applicant.

Double Patenting

Claims 1-19 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-19 of U.S. Patent No. 6,621,497 B1. Although the conflicting claims are not identical, they are not patentably distinct from each other because the difference only encompasses the addition of the gray-scale converter at the input or at the output of the process. And addition of a gray balance (gray-scale converter) at either stage in a color conversion process would not have required a motivation of any outstanding significance.

Claim Objections

Claim 1 is objected to because of the following informalities: missing word in line 13: "outputted from said calculating means" should read "outputted from said first calculating means". Appropriate correction is required, even if the given line locations of the errors are not figured the same by the applicant.

Claims 3, 4, 6, and 7 are objected to because of the following informalities: duplicate word, "said said first comparison-result data" should read "said first comparison-result data".

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Regarding claims 1 and 20, the phrase "at least" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d). It should be replaced by "at least on one of" or be removed entirely.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kagawa ('050) in view of Stewart ('671).

Kagawa discloses an image processing apparatus and method whereby a set of three color data representing RGB is input (and converted into CMY) and then put through an α (minimum value) and β (maximum value) calculator (col. 31, line 65 and **32** in Figure 30) which reads on the first calculation means for calculating a minimum value and a maximum value of said first set of three color data for each pixel of claim 1. Kagawa discloses a hue data calculator (col. 31, lines 65-66 and **33** in Figure 30), which

receives the color data CMY and their maximum and minimum values and calculates r, g, b, y, m and c (col. 32, lines 13-22) which reads on the hue data calculating means of claim 1. Kagawa discloses a Zero Remover (col. 32, lines 25-26 and **35** in Figure 31) and a Multiplier (col. 32, line 30 and **36** in Figure 31) and a Divider (col. 32, line 33-34 and **40** in Figure 31), wherein the data entering the Zero Remover comes from the Hue Data Calculator (**33** in Figure 30) and goes then into the Multiplier. The Zero Remover reads on the means for generating first comparison-result data and the Multiplier reads on the means for generating second comparison-result data of claim 1. Kagawa discloses a Polynomial Calculator (col. 32, lines 25-37 and **34** in Figure 30) that reads on the second calculation means for performing calculation using the hue data outputted from the hue data calculator. Kagawa discloses a coefficient generator (col. 31, lines 66-67 and **110** in Figure 30), which provides coefficients to the hue data (col. 32, line 44) polynomial data (first and second comparison-result data coefficients from the second calculating means) (col. 32, line 44) and the matrix calculator (**111** in Figure 30). Kagawa discloses a matrix calculator/synthesizer (col. 31, line 67 and **111** in Figure 30) for calculating three-color data of CMY (col. 33, lines 20-23) performed on the encompassed data and coefficients (col. 33, lines 24-37).

Kagawa does not disclose expressly that there is a gray scale conversion means for converting the gray scale of this latter set of three color data, CMY, to produce a second set of three-color data. Performing gray balance is common in color correction for color systems to assure that neutral colors have no visible tone or tone shift from low to high-density values.

Stewart discloses a three-color color conversion apparatus wherein gray balance has been incorporated as a step in a color conversion system (col. 12, lines 18-25 and **422** in Figure 13).

Kagawa & Stewart are combinable because they are from the same field of endeavor and thus constitute analogous art, being that of RGB and CMY color conversion systems.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to add a gray balance operation to a system of color correction, wherein minimum and maximum values are incorporated into a hue calculation and output after a matrix coefficient calculation.

The suggestion/motivation for doing so would have been that gray balance is performed as a consequence of objectionable color shifting from low to high-density tones, and is obviously and readily applicable to any color correction system, in any system that uses color, such as monitors, scanners or printers. Especially to apply it so at the end of the process, after performing other color transforms.

Therefore, it would have been obvious to combine Kagawa with Stewart to obtain the invention as specified in claim 1.

Claims 2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kagawa ('050) in view of Stewart ('671).

Kagawa and Stewart disclose the apparatus and method in the claim 1 rejection above. Kagawa adds that the minimum is added to the output from the matrix calculation in synthesizer **210** (col. 41, lines 35-38 and Figure 30).

Claims 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kagawa ('050) in view of Stewart ('671).

Kagawa and Stewart disclose the method and apparatus in the claim 1 rejection above, the means of accomplishing the method or apparatus is implied within it. If a small number of potential embodiments come to them mind of one skilled in the art such that it would have been obvious to apply them as a means, then the reference anticipates the claim, and thus is rejected under the same justification as claim 1.

Kagawa has shown a system whereby the first set of data is RGB (input data in Figure 30) and the third set of data is CMY (output from **113** in Figure 30). Kagawa also specifies that rgb and cmy are calculated according to the formulae (col. 7, line 55 – col. 8, line 7) that only vary from those given in the claims by the nature of whether or not there is a conversion from RGB to CMY color space. The conversion from one color space to another is not a technological feature of an invention but is common and well-known in the art for color correction or calibration operations and therefore does not constitute a non-obvious addition. Such a step of complement conversion (**31** in Figure 30) could be inserted at any step within the process to satisfy the limits of the claim.

Claims 12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kagawa ('050) in view of Stewart ('671).

Kagawa and Stewart disclose the method and apparatus in the claim 1 rejection above. Kagawa has already been shown to disclose the first-comparison data generating means to determine the comparison result data of rgb and cmy through the Zero Remover (col. 32, lines 25-26 and **35** in Figure 31). Kagawa has also been shown to disclose the second-comparison data generating means for multiplying (and thereby determines products of hue data) the first comparison-result with a Multiplier (col. 32, line 30 and **36** in Figure 31) with specific coefficients sent to the Polynomial Calculator (**34** in Figure 30) along with the comparison result data (**T1-T4** in Figure 30).

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kagawa ('050) in view of Stewart ('671).

Kagawa and Stewart disclose the method and apparatus in the claim 1 rejection above. Kagawa adds that the first comparison-result data is determined from two of the hue data and is effective for only one of the six hues (col. 32, lines 26-29) by the Zero Remover (**35** in Figure 31) and are effective for only one of the hues (col. 33, lines 58-64 and Figure 34).

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kagawa ('050) in view of Stewart ('671).

Kagawa and Stewart disclose the method and apparatus in the claim 1 rejection above. Kagawa adds that the coefficient generating means generates specified coefficients in matrix equation 31 (col. 34, lines 57-64) are equivalent to those generated by matrix equation 5 in claim 18.

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kagawa ('050) in view of Stewart ('671).

Kagawa and Stewart disclose the method and apparatus in the claim 1 rejection above. The minimum value generator in the first calculation means would generate an identification code of a hue datum which is value zero, if one of the hue data was value zero. The second calculation means, coefficient generating means and third calculation means have already been disclosed above.

Additional Notes

Claims 3-4, 6-7, 13-14, 17 have not been rejected based upon a prior-art rejection, but upon a double-patenting rejection.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ohtsuka ('216), Eichler ('614), Hirota ('353), Kousaki ('476), Naito ('340), Kouzaki ('953), Ohashi ('558), and Kim ('668) refer to gray balance applied to color correction.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy J. Stephany whose telephone number is 703-305-8951. The examiner can normally be reached on 8:30 am - 4:30 pm ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Coles can be reached on 703-305-4712. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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